

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
TENTATIVE**

**ORDER NO. R9-2004-0154
NPDES PERMIT NO. CA0001368**

**WASTE DISCHARGE REQUIREMENTS
FOR
DUKE ENERGY SOUTH BAY, LLC
SOUTH BAY POWER PLANT
SAN DIEGO COUNTY**

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Monitoring and Reporting Program No. R9-2004-0154

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Attachment 1:	South Bay Power Plant Intake and Discharge Monitoring Stations
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The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

Facility Description

1. Duke Energy South Bay, LLC, (Duke Energy) operates the South Bay Power Plant (SBPP), a steam electric generating plant consisting of four Units with a total combined generating capacity of 723 megawatts (MW). The SBPP is located at 990 Bay Blvd., Chula Vista, California, in Section 9, T18S, R2W SBBM.
2. The SBPP discharges up to 601.13 MGD of heated once-through-cooling water to San Diego Bay, a navigable water of the United States within the San Diego Region. In addition, Duke Energy also discharges stormwater runoff to San Diego Bay. The stormwater discharge is regulated under waste discharge requirements contained in the State Water Resource Control Board (SWRCB) Order No. 97-03-DWO, NPDES General Permit No. CAS000001, *Waste Discharge Requirements for Discharges of Storm Water Associated With Industrial Activities Excluding Construction Activities*. The storm water runoff does not come into contact with industrial processes, material storage or other sources of pollutants.
3. The generation capacity and once-through cooling water volume for each Unit is shown below:

Unit #	Gross Generation		Total Flow per Unit	
		Mwe		gpm
Unit 1		152		78,000
Unit 2		156		78,000
Unit 3		183		124,600
Unit 4		232		136,800
Total		723	MWe	417,400 gpm

4. SBPP has been operating at its current location since 1960, and its discharges have been regulated under Order Nos. 96-05, 85-09, 76-10, 74-91 and 69-R3 (NPDES Permit No. CA00013680), issued to Duke Energy and its predecessors SDG&E and Sempra Energy. The San Diego Unified Port District (Port) acquired SBPP from Sempra Energy in 1999 and leases the plant to Duke Energy. Duke Energy's current lease of the SBPP from the Port expires in 2009.

Waste Discharges

5. The SBPP utilizes San Diego Bay water to cool the steam condensers associated with each of its four Units. The water is drawn into the power plant via three intake structures located in San Diego Bay. The heated once-through cooling water is discharged via four outflow pipes to a tidal discharge basin on the plant property. Cooling water from the discharge basin is returned to San Diego Bay via a discharge channel. The temperature of the discharge may be as much as 25 to 30 degrees F higher than the ambient intake water when the plant is operating at peak load. This correlates to discharge temperatures as high as 100 degrees F for several hours of the day.

6. In addition to waste heat, the cooling water discharge contains trace amounts of copper that leaches from the copper-based condenser tubes of Units 2, 3, and 4. The power plant adds approximately 700 pounds of copper per year to San Diego Bay from leaching of copper from its condensers.
7. The once-through cooling water also contains residual chlorine from the intermittent chlorination of the cooling water system to minimize formation of algae and slime in the condenser tubing. The average concentration of total residual chlorine in the discharge ranges from 40 µg/l to 70 µg/l.
8. The SBPP cooling water discharge may cause or has the reasonable potential to cause or contribute to an excursion above the narrative objective of toxicity stated in the Basin Plan. This is due to the combined effects of total residual chlorine, chlorinated organic compounds, copper, and other trace metals contained in the discharge. The average survival rate of test species exposed to the SBPP discharge ranges from 90 to 100 percent.

Water Quality Objectives

9. Water Quality Objective (approved as State Water Quality Standards by the U.S. EPA) applicable to south San Diego Bay are set forth in the *Water Quality Control Plan for the San Diego Basin* (9)(Basin Plan), and the *State Thermal Plan* and *Bays and Estuaries Policy* adopted by the SWRCB.
10. Additional Water Quality Criteria and Standards applicable to south San Diego Bay are set forth in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy, SIP) adopted by the SWRCB and the provisions of the *California Toxics Rule* (CTR) promulgated by the U.S. EPA.
11. Water Quality Objectives for ocean waters set forth in the *California Ocean Plan* (adopted by the SWRCB), while not directly applicable to waters of San Diego Bay, provide relevant information for development of Waste Discharge Requirements for discharges affecting marine waters, including San Diego Bay.
12. South San Diego Bay, including the SBPP discharge channel, is a shallow estuarine habitat with low tidal flushing. The south San Diego Bay area supports a variety of aquatic habitats. These habitats include submerged lands, eelgrass beds, mudflats and salt marsh. Beneficial Uses include Estuarine Habitat; Marine Habitat; Wildlife Habitat; Rare, Threatened or Endangered Species; Preservation of Biological Habitats of Special Significance; and Shellfish Harvesting.
13. The most restrictive objectives and criteria applicable to south San Diego Bay are summarized in the following table:

Summary of Water Quality Objectives for Waters of South San Diego Bay

Parameter	Most Restrictive Objective	Use Protected (most Sensitive)	Authority/Source	Note/Comment
Temperature	Elevated temperature waste shall comply with limitations necessary to protect beneficial uses.	EST, MAR, WILD, BIOL, RARE, SHELL	Thermal Plan	N/A
Dissolved Oxygen	Dissolved oxygen levels shall not be less than 5.0 mg/l in inland surface waters with designated MAR or WARM beneficial uses or less than 6.0 mg/l in waters with COLD beneficial uses. The annual mean dissolved oxygen concentration shall not be less than 7 mg/l more than 10% of the time.	EST, MAR, WILD, BIOL, RARE, SHELL	Basin Plan	Existing monitoring data for south San Diego Bay indicates that the DO objective is not being met in the receiving water itself.
Copper (dissolved)	3.1 µg/l	MAR, WILD, BIOL	CTR/SIP	Existing monitoring data for south San Diego Bay indicates that the copper objective is not being consistently met in the receiving water itself.
Total Residual Chlorine (TRC)	85 µg/l – 144 µg/l	MAR, WILD, BIOL	Site-specific Water Quality Objective developed by discharger based on total uninterrupted chlorine discharge time of 20 to 80 minutes.	N/A
Whole Effluent Toxicity	<i>All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.</i>	MAR, WILD, BIOL	Basin Plan	N/A

Waste Discharge Impacts

14. The biotic communities in the immediate vicinity of the discharge point and in the discharge channel have been degraded by exposure to the once-through-cooling water discharge from the SBPP in spite of effluent limits intended to mitigate the thermal impact of the discharge. The degradation to the biotic communities is due to several factors, including elevated temperature, flow volume, and flow velocity. The existing conditions within the discharge channel, particularly within 1000-1500 feet of the discharge basin, do not constitute a “balanced indigenous community.

The degradation to biotic communities includes a lower diversity of benthic invertebrates residing in the near field stations of the discharge channel compared to those in reference stations outside the discharge channel. Furthermore, certain invertebrate species (including polychaete worms and amphipods) are largely absent in near field stations of the discharge channel. These species were found in abundant quantities in reference stations outside the discharge channel. The absence of these species from the discharge channel demonstrates that these species cannot survive under the warm thermal regimes of the discharge channel and were being adversely impacted.

In addition to a degradation of benthic invertebrates, up to 104 acres of critical eelgrass habitat has been precluded from the discharge channel and other areas of south San Diego Bay due to the redistribution of turbidity in the Bay from the SBPP discharge.

15. The Beneficial Uses (as defined by the *Basin Plan*) that may be impaired due to the effect of the SBPP discharge on water quality include: Estuarine Habitat; Marine Habitat; Wildlife Habitat; Preservation of Rare and Endangered Species; Preservation of Biological Habitats of Special Significance; and Shellfish Harvesting. It is evident that the impacts on Beneficial Uses due to the discharge of once-through-cooling water cannot be completely eliminated except through termination of the discharge. The adverse impacts are due to the individual and combined effects of the elevated temperature and the volume and velocity of the discharge.

Regulatory Requirements

16. Pursuant to 40 CFR 122.45 of the NPDES regulations, effluent limitations must be met at point of discharge, prior to the effluent entering the receiving waters of the United States. Pursuant to 40 CFR 122.41(i)(1) of the NPDES regulations the samples and measurements taken for the purpose of monitoring shall also be representative of the monitoring activity.

SBPP's existing location for measurement of discharge temperature for compliance with its thermal discharge limitations (average daily and instantaneous maximum Delta T limitations) does not comply to the NPDES regulations. This is because the existing discharge temperature measurement location (Station S1) is not representative of the SBPP discharge and is over 1,000 feet downstream of discharge and part of the receiving waters of south San Diego Bay. The appropriate location for measurement of discharge temperature to comply with thermal discharge limitations is within the SBPP discharge basin at or inland of the property line (Station S2).

17. Duke Energy is unable to immediately comply with its thermal discharge limitation (average daily Delta T = 15 degrees F and instantaneous maximum Delta T = 25 degrees F) at the SBPP property line (Station S2) under the current design and operation of the SBPP except by curtailing power generation or shutting down the power plant. It is appropriate to provide additional time (up to 36 months) for Duke Energy to modify its operations in order to reduce its heat output and comply with thermal discharge limitations at Station S2.
18. The SBPP is critical to the overall regional power needs of the San Diego area. The SBPP is under a Reliability Must-Run (RMR) contract with the California Independent System Operator (ISO) and curtailing or shut down of operations at the power plant may cause Duke Energy to violate its RMR contract. Furthermore, any reductions in SBPP's power generation output may directly impact the ability of the ISO controlled electric grid to meet the power needs of the San Diego area.
19. The thermal discharge limitations (average daily and instantaneous maximum Delta T limitations) applicable to the SBPP discharge do not ensure water quality necessary for the protection and propagation of balanced indigenous communities within the SBPP discharge channel, particularly within 1000-1500 feet of the discharge basin, as required by Section 316(a) of the Clean Water Act (CWA). Furthermore, these thermal limitations do not fully ensure protection of water quality needed for attainment of the beneficial uses of south San Diego Bay as required by the *Basin Plan* and *State Thermal Plan*.

The SBPP discharge channel exhibits a lower overall diversity of benthic invertebrates and the absence of certain indigenous invertebrate species (polychaete worms and amphipods). Furthermore, up to 104 acres of eelgrass habitat (critical to the protection and propagation of indigenous communities) have been precluded from the discharge channel and other areas of south San Diego Bay due to the redistribution of turbidity in the Bay from the SBPP discharge.

Measures to mitigate the detrimental impacts of the SBPP discharge to the discharge channel are needed. Measures to restore the Beneficial Uses of south San Diego Bay and to rehabilitate the damage caused to the biological resources of the Bay from the over 40 year operation of the power plant are also necessary.

20. The location, design, construction and capacity of the existing cooling water intake structures at SBPP fail to reflect the Best Technology Available (BTA) for minimizing adverse environmental impact as required by Section 316(b) of the CWA.

As indicated in the technical study report titled "*SBPP Cooling Water System Effects on San Diego Bay, Volume II: Compliance with Section 316(b) of the Clean Water Act for the South Bay Power Plant, August 2004*" submitted by Duke Energy, approximately 27 percent of the goby complex and 50 percent of the longjaw mudsucker larval source water populations are lost annually due to entrainment in the SBPP. Furthermore, approximately 13 percent of equivalent adult anchovy and 15 percent equivalent adult silverside fish populations are also lost annually due to larval entrainment losses. These losses of larval and adult fish populations due to entrainment in the SBPP constitute a significant adverse environmental impact.

21. On February 16, 2004 the USEPA promulgated a new rule for Section 316(b) of the CWA. This rule, *40 CFR 125, Subpart J, Requirements Applicable to Cooling Water Intake Structures for "Phase II Existing Facilities"*, under Section 316(b) of the CWA, establishes location, design, construction and capacity standards, for cooling water intake structures at existing power plants that use the largest amounts of cooling water (i.e. greater than 50 MGD).

SBPP meets the definition of a "Phase II Existing facility" and must select and demonstrate compliance with, one of the five specified compliance alternatives in Section 125.94(a) of the new rule that have been determined to satisfy the BTA performance standard to minimize entrainment and impingement impacts of power plant intake structures.

Pursuant to Section 125.95(b) of the new rule, Duke Energy is required to perform a *Comprehensive Demonstration Study* to characterize impingement mortality and entrainment, to describe the operation of the cooling water intake structures at SBPP, and to confirm that the technologies, operational measures, and/or restoration measures it has selected or installed, or will install, to meet one of the five compliance alternatives listed in Section 125.94(a) of the new rule. Pursuant to the new rule it is appropriate to provide time for Duke Energy to select a compliance alternative, complete the *Comprehensive Demonstration Study*, and implement measures necessary to satisfy the BTA performance standards of the rule.
22. Pursuant to the *State Implementation Policy* and the provisions of the *California Toxics Rule* (CTR) the SBPP discharge does not have to the reasonable potential to cause or contribute to an excursion above the applicable priority pollutant criterion or objective for any of the 126 priority pollutants listed in the CTR, except copper (total recoverable).
23. Since copper in the SBPP discharge has the reasonable potential to cause or contribute to an excursion above the CTR criteria, water-quality based effluent limitations (4.44 µg/l – maximum daily and 3.53 µg/l – average monthly) are required for copper. Duke Energy is unable to immediately comply with the copper discharge limitations under the current design and operation of the SBPP. It is appropriate to provide additional time (up to 36 months) for Duke Energy to modify its operations or implement control measures in order to comply with the copper discharge limitations.
24. On November 19, 1982, the USEPA promulgated revised effluent guidelines and standards for the steam electric power generating point source category (hereinafter power plant regulations). These power plant regulations establish effluent limitation guidelines, pretreatment standards and new source performance standards which are contained in 40 CFR Parts 125 and 423. The best practicable control technology currently available (BPT) and best available technology economically achievable (BAT) effluent limitations guidelines promulgated under 40 CFR Part 423 are applicable to discharges from the SBPP.
25. Effluent limitations, national standards of performance, and toxic and pretreatment effluent standards established pursuant to Sections 301, 302, 303(d), 304, 306, 307, 316, and 403 of the CWA, as amended (33 U.S.C. 1251 et seq.), are applicable to the discharge.

26. The waste discharge requirements contained in this Order are consistent with state and federal anti-degradation policies (40 CFR 131.12 and State Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California) because this Order does not authorize any new or additional discharges of waste or pollutants from SBPP. Furthermore, effluent concentration and mass emission rate limitations in this Order are the same or more stringent than those in Order No. 96-05.
27. The waste discharge requirements in this Order implement all necessary terms and conditions of an NPDES permit for the combined discharge of heated once-through cooling water and other waste discharges from the South Bay Power Plant to San Diego Bay, and this Order is issued in lieu of an NPDES permit pursuant to Chapter 5.5, commencing with Section 13370, of the Porter Cologne Water Quality Control Act in Division 7 of the California Water Code and U.S. EPA approval of the state's water quality control program under subdivision (b) and (c) of Section 402 of the Clean Water Act [33 U.S.C. 1342(b) and (c)].
28. This Regional Board, in establishing the requirements contained herein, considered factors including, but not limited to, the following:
 - (a) Beneficial uses to be protected and the water quality objectives reasonably required for that purpose;
 - (b) Other waste discharges;
 - (c) The need to prevent nuisance;
 - (d) Past, present, and probable future beneficial uses of San Diego Bay waters under consideration;
 - (e) Environmental characteristics of San Diego Bay waters under consideration, including the quality of water available thereto;
 - (f) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;
 - (g) Economic considerations;
 - (h) The need for developing housing within the region; and,
 - (i) The need to develop and use recycled water.
29. The issuance of waste discharge requirements for this discharge is exempt from the requirement for preparation of environmental documents under the California Environmental Quality Act (Public Resources Code, Division 13, Chapter 3, Section 21000 et seq.) in accordance with the California Water Code, Section 13389.
30. This Regional Board has notified the discharger and all known interested parties of its intent to renew NPDES permit requirements for the existing discharge of waste.
31. This Regional Board has, at a public meeting, heard and considered all comments pertaining to the discharge of once-through cooling water and other wastes from the South Bay Power Plant to San Diego Bay.

IT IS HEREBY ORDERED, that Duke Energy South Bay, LLC (hereinafter discharger), in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act and the regulations adopted thereunder, shall comply with the following requirements for the discharge of once-through cooling water and other wastes from the SBPP to San Diego Bay:

A. PROHIBITIONS

1. Compliance with the waste discharge prohibitions contained in the Basin Plan (Attachment 1) is required as a condition of this Order.
2. Discharges of wastes in a manner or to a location which have not been specifically authorized by this Order and for which valid waste discharge requirements are not in force are prohibited.
3. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields. [Enclosed Bays and Estuaries Policy (EBEP)]
4. The discharge of municipal and industrial waste sludge and untreated sludge digester supernatant, centrate, or filtrate to San Diego Bay, or into a waste stream that discharges to San Diego Bay is prohibited. This prohibition does not apply to naturally occurring material removed from once-through cooling water system or from the San Diego Bay water drawn into the once-through cooling water system. [EBEP and Ocean Plan (OP)]
5. The deposition of rubbish or refuse into San Diego Bay or at any place where they would be eventually transported to San Diego Bay is prohibited. Rubbish and refuse include any cans, bottles, paper, plastic, vegetable matter, or dead animals or dead fish deposited or caused to be deposited by human activity. This prohibition does not apply to naturally occurring material removed from once-through cooling water system or from the San Diego Bay water drawn into the once-through cooling water system. [EBEP]
6. The discharge or by-passing of untreated waste, other than once-through (non-contact) cooling water, and fuel pump lube water to San Diego Bay, is prohibited. [EBEP]
7. The combined discharge to San Diego Bay from the SBPP in excess of 601.13 MGD is prohibited unless the discharger obtains revised waste discharge requirements authorizing an increased flowrate.
8. The discharge of polychlorinated biphenyl compounds, such as those commonly used for transformer fluid, is prohibited. [40 CFR 423]
9. Total residual chlorine may not be discharged from any single generating unit for more than two hours per day. **Simultaneous multi-unit chlorination is prohibited.**

10. New discharges^{1/} of municipal wastewaters and industrial process waters^{1/} (exclusive of cooling water discharges) to San Diego Bay which are not consistently treated and discharged in a manner that would enhance the quality of receiving waters above that which would occur in the absence of the discharge, are prohibited. [EBEP]
11. Discharges from the SBPP service water system to San Diego Bay are prohibited.
12. The discharge of wastes to San Diego Bay containing concentrations of pollutants in excess of those identified in the *Effluent Limitations* of this Order is prohibited.
13. Odors, vectors, and other nuisances of waste origin beyond the property line are prohibited.

B. EFFLUENT LIMITATIONS

1. Cooling Water Discharge

- (a) The temperature of the cooling water discharge shall not average more than 15°F (8.3°C) above that of the intake water during any calendar day. The cooling water discharge shall not at any time exceed 25°F (13.9°C) above that of the intake water.

Compliance of these thermal discharge limitations shall be enforced at monitoring Station S2 (property line), 36 months after adoption of this Order. In the interim, compliance with these limitations shall be enforced at monitoring station S1 (i.e. 1000 feet into the discharge channel).

- (b) The pH of the cooling water discharge shall be within the limits of 7.0 to 9.0 at all times.
- (c) For 96-hour static or continuous flow (acute toxicity)^{2/} bioassay tests, using standard test species, the undiluted cooling water discharge shall not produce less than 90 percent survival, 50 percent of the time (based on all tests conducted during an individual calendar quarter), and shall not produce less than 70 percent survival, 10 percent of the time (based on all tests conducted during an individual calendar quarter).
- (d) The total chlorine residual in the cooling water discharge shall be the lower of the following:

- (1) The value calculated using the following equation:

$$\log y = (ax + b) - t_{0.90} S_y S_X \{ 1 + 1/n + (x - \bar{X})^2 / \sum (x_i - \bar{X})^2 \}^{0.5}$$

Where:

y	=	residual chlorine limit (mg/l);
x	=	log (base 10) of the duration of uninterrupted chlorine/bromine discharges in minutes;
a	=	slope of linear regression line = -0.404;
b	=	intercept of linear regression line = 0.383;
$t_{0.90}$	=	"t" statistic ($\alpha = 0.10$, $n-2$ degrees of freedom) = 1.685;
$S_y S_x$	=	standard deviation about regression line = 0.393;
n	=	number of toxicity measurements available for regression = 41;
X	=	mean log exposure time = 3.058;
$\Sigma(x_i - X)^2$	=	sum of squares about X = 33.947; or

(2) The U.S. EPA, BAT effluent limitation of 0.20 mg/l (40 CFR 423).

(e) Copper (total recoverable) - Final Effluent Limitations

The discharger shall comply with the following final effluent limitations for copper (total recoverable), 36 months after adoption of this Order :

The average monthly^{3/} copper concentration in the cooling water discharge shall not exceed 3.53 $\mu\text{g/L}$. The maximum daily^{4/} copper concentration in the cooling water discharge shall not exceed 4.44 $\mu\text{g/L}$.

(f) Copper (total recoverable) - Interim Effluent Limitation

The discharger shall comply with the following interim effluent limitation for copper (total recoverable):

The maximum daily concentration of copper in the cooling water discharge shall not exceed the concentration of copper in the intake water by more than 2.5 $\mu\text{g/L}$.

The interim limitation shall remain in effect until final limitations for copper are enforced, starting 36 months after adoption of this Order (see Section B.1.(e)).

2. Waste discharged from the SBPP to San Diego Bay must be essentially free of:

- (a) Material that is floatable or will become floatable upon discharge.
- (b) Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life.
- (c) Substances which will accumulate to toxic levels in marine waters, sediments or biota.

- (d) Substances that significantly decrease the natural light to benthic communities and other marine life.
 - (e) Materials that result in aesthetically undesirable discoloration of the bay surface.
- 3. All waste treatment, containment and disposal facilities shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.
- 4. All waste treatment, containment and disposal facilities shall be protected against erosion, overland runoff and other impacts resulting from a 100-year frequency 24-hour storm.
- 5. Collected screenings, sludges, and other solids removed from liquid wastes, shall be disposed of in accordance with all applicable requirements.
- 6. The SBPP discharge of elevated temperature wastes to San Diego Bay shall comply with limitations necessary to assure protection of beneficial uses. [Thermal Plan (TP)]
- 7. The discharge of any pollutant for which effluent limitations are not established by this Order is prohibited except in the following circumstances:
 - (a) The pollutant has been identified in the application for this permit.
 - (b) The pollutant has not been identified in the application for this permit, so long as the discharger: (1) has complied with all applicable requirements for disclosure of information about its pollutant discharges, operations and sources of wastes; and (2) complies with all applicable requirements for notification of changes in its operations and discharges.

C. COOLING WATER INTAKE STRUCTURE SYSTEM SPECIFICATIONS

- 1. The discharger shall maintain velocities of water entering the intake structures at design levels and routinely clean the bar racks at SBPP. The discharger shall rotate and clean intake screen assemblies for each unit, when operating, as needed for the purpose of maintaining intake water velocities as close as practical to design levels.
- 2. The discharger shall minimize once-through cooling water flow where possible when units are at reduced load or out of service.
- 3. The discharger shall avoid sudden increases in once-through cooling water flow whenever possible.

D. RECEIVING WATER LIMITATIONS

1. The SBPP discharge to San Diego Bay shall not by itself or jointly with any other discharge(s) cause non-attainment of the following water quality objectives:

- (a) Physical Characteristics

- (1) Waters shall not contain oils, greases, waxes, or other materials in concentrations which result in a visible film or coating on the surface of the water or on objects in the water, or which cause nuisance or which otherwise adversely affect beneficial uses. [Basin Plan (BP)]
 - (2) The discharge of waste shall not cause aesthetically undesirable discoloration of the bay surface. [OP]
 - (3) Natural light shall not be significantly reduced as the result of the discharge of waste^{1/}. [OP]
 - (4) The rate of deposition of inert solids and the characteristics of inert solids in bay sediments shall not be changed such that benthic communities are degraded. [OP]
 - (5) Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses. [BP]
 - (6) The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses. [BP]
 - (7) Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses. [BP]
 - (8) Waters shall not contain taste or odor producing substances at concentrations which cause a nuisance or adversely affect beneficial uses. [BP]
 - (9) Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. In addition, within San Diego Bay, the transparency of bay waters, insofar as it may be influenced by any controllable factor, either directly or through induced conditions, shall not be less than 8 feet in more than 20 percent of the readings in any zone, as measured by a standard Secchi disk. Wherever the water is less than 10 feet deep, the Secchi disk reading shall not be less than 80 percent of the depth in more than 20 percent of the readings in any zone. [BP]

(b) Chemical Characteristics

- (1) The pH shall not be changed at any time more than 0.2 units from that which occurs naturally. The pH shall not be depressed below 7.0 nor raised above 9.0. [BP]
- (2) The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions. [OP]
- (3) The concentration of substances set forth in *Receiving Water Limitation D.2* in marine sediments shall not be increased to levels which would degrade indigenous biota. [OP]
- (4) The concentration of organic materials in marine sediments shall not be increased to levels which would degrade marine life. [OP]
- (5) Nutrient materials shall not cause objectionable aquatic growth or degrade indigenous biota. [OP]
- (6) San Diego Bay waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses. [BP]
- (7) The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH_3) to exceed 0.025 mg/l (as N) in San Diego Bay. [BP]
- (8) No individual pesticide or combination of pesticides shall be present in the water column, sediments or biota at concentration(s) that adversely affect beneficial uses. Pesticides shall not be present at levels which will bioaccumulate in aquatic organisms to levels which are harmful to human health, wildlife or aquatic organisms. [BP]

(c) Biological Characteristics

- (1) Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded. [OP]
- (2) The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered. [OP]
- (3) The concentration of organic materials in fish, shellfish or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health. [OP]

(d) Radioactivity

Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life. [BP]

(e) Toxicity

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board. [BP]

2. The following receiving water limits apply to all receiving waters including the discharge channel:

- (a) For 96-hour static or continuous flow (acute toxicity)^{2/} bioassay tests, using standard test species, the undiluted receiving waters shall not produce less than 90 percent survival, 50 percent of the time (based on all tests conducted during an individual calendar quarter), and shall not produce less than 70 percent survival, 10 percent of the time (based on all tests conducted during an individual calendar quarter).
- (b) The receiving water limitation for total chlorine residual shall be calculated using the following equation:

$$\log y = (ax + b) - t_{0.90} S_y S_x \{1 + 1/n + (x - X)^2 / \Sigma(x_i - X)^2\}^{0.5}$$

Where:

y	=	residual chlorine limit (mg/l);
x	=	log (base 10) of the duration of uninterrupted chlorine/bromine discharges in minutes;
a	=	slope of linear regression line = -0.404;
b	=	intercept of linear regression line = 0.383;
t _{0.90}	=	“t” statistic (alpha = 0.10, n-2 degrees of freedom) = 1.685;
S _y S _x	=	standard deviation about regression line = 0.393;
n	=	number of toxicity measurements available for regression = 41;
X	=	mean log exposure time = 3.058;
Σ(x _i - X) ²	=	sum of squares about X = 33.947

- (c) The radioactivity in the receiving waters shall not exceed limits specified in Title 17, Division 5, Chapter 4, Group 3, Article 3, Section 32069 of the California Code of Regulations.

E. SPECIAL SUPPLEMENTAL STUDIES AND COMPLIANCE WORKPLANS

1. CWA Section 316(b) Updated Comprehensive Demonstration Study – Intake Structures

Pursuant to Section 125.95(b) of the new CWA Section 316(b) rule (*Phase II*), the discharger shall perform a *Comprehensive Demonstration Study* (Study) to demonstrate compliance with one of the five compliance alternatives listed in Section 125.94(a) of the new rule. The Study would characterize impingement mortality and entrainment, describe the operation of the cooling water intake structures at SBPP, and confirm that the technologies, operational measures, and/or restoration measures Duke Energy has selected or installed, or will install, will meet one of the five compliance alternatives listed in the new rule. The Study shall contain all applicable information listed in Section 125.95(b) of the new rule (including *Technology Installation and Operation Plan* and/or *Restoration Plan* etc. with proposed implementation schedules) and will be due no later than 30 months after adoption of this Order.

The discharger shall submit a *Proposal for Information Collection* prior to submittal of the *Comprehensive Demonstration Study*. The *Proposal for Information Collection* as required by Section 125.95(b)(1) of the rule, will be due no later than 12 months after adoption of this Order and must include the following information:

- (a) A description of the proposed and/or implemented technologies, operational measures, and/or restoration measures to be evaluated in the Study.
- (b) A list and description of any historical studies characterizing impingement mortality and entrainment and/or the physical and biological conditions in the vicinity of the cooling water intake structures and their relevance to this proposed Study. If the discharger proposes to use existing data, it must demonstrate the extent to which the data are representative of current conditions and that the data were collected using appropriate quality assurance/quality control procedures.
- (c) A summary of any past or ongoing consultations with appropriate Federal, State, and Tribal fish and wildlife agencies that are relevant to this Study and a copy of written comments received as a result of such consultations.
- (d) A sampling plan for any new field studies the discharger proposes to conduct in order to ensure that there is sufficient data to develop a scientifically valid estimate of impingement mortality and entrainment at the site. The sampling plan must document all methods and quality assurance/quality control procedures for sampling and data analysis. The sampling and data analysis

methods proposed must be appropriate for a quantitative survey and include consideration of the methods used in other studies performed in the source waterbody. The sampling plan must include a description of the study area (including the area of influence of the cooling water intake structure(s)), and provide a taxonomic identification of the sampled or evaluated biological assemblages (including all life stages of fish and shellfish).

2. Workplan for Relocation of Thermal Discharge Limitations Compliance Point to the Property Line (Station S2)

Order No. R9-2004-0154 requires the discharger to comply with its thermal discharge limitations (see Section B.1(a) of this Order) at Station S2 (SBPP property line) no later than 36 months after adoption of the Order. In the interim, compliance with thermal discharge limitations shall be enforced at Station S1 (i.e. 1000 feet into the SBPP discharge channel).

This change in compliance point is necessary in order for Duke Energy to fully comply with federal NPDES regulations (40 CFR 122.45 and CFR 122.41(i)(1)) that require effluent limitations to be enforced at a location that is at the point of discharge and representative of the discharge.

The discharger shall submit a Workplan that details the steps the discharger will be implementing to enable compliance with its average daily and instantaneous maximum Delta T thermal limitations at Station S2. These steps may include, but not limited to, implementing a reduction in power generation output, improving thermal efficiency of its steam turbines, routing waste heat from its turbines to other industrial applications. The Workplan shall also discuss the financial and operational impacts of the relocation of the temperature compliance point on SBPP and on the viability of its power grid. Furthermore, the report shall also identify the impact of this change on the reliability-must-run (RMR) status of the SBPP, as designated by the California Independent System Operator (ISO).

The discharger shall submit the Workplan no later than 12 months after adoption of the Order. Progress Reports on the implementation of the Workplan shall be submitted on a semiannual basis after submission of the Workplan. A Final Technical Report shall be due no later than 30 months after adoption of the Order.

3. Workplan for Compliance with Final Copper Effluent Limitations

The discharger shall develop and implement a Workplan to comply with its final effluent limitations for total recoverable copper (see Section B.1(e) of this Order). The Workplan shall describe the additional source control measures, pollutant minimization actions, or waste treatment the discharger proposes to implement in order to comply with its final copper limitations. The Workplan may also include proposals to conduct Water Effect Ratio or translator studies that could be used to develop site-specific objectives for total recoverable copper in south San Diego Bay. The Workplan shall

estimate the concentration and mass of copper that will be reduced in the discharge due to the proposed measures. The discharger shall fully implement the Workplan and comply with its final effluent limitations for total recoverable copper no later than 36 months after adoption of the Order.

The discharger shall submit the Workplan no later than 12 months after adoption of the Order. Progress Reports on the implementation of the Workplan shall be submitted on a semiannual basis after submission of the Workplan. A Final Technical Report on the implementation of the Workplan will be due no later than 30 months after adoption of the Order.

F. PROVISIONS

1. Neither the treatment nor the discharge of waste shall create a pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code.
2. The discharger must comply with all conditions of this Order. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a report of waste discharge submitted in application for permit modification or reissuance.
3. The discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncomplying discharge.
4. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:
 - (a) Violation of any terms or conditions of this Order;
 - (b) Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts; or
 - (c) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

The filing of a request by the discharger for modification, revocation and reissuance, or termination of this Order, or a notification of planned change in or anticipated noncompliance with this Order does not stay any condition of this Order.

5. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant and that standard or prohibition is more

stringent than any limitation on the pollutant in this Order, the Regional Board may institute proceedings under these regulations to modify or revoke and reissue the Order to conform to the toxic effluent standard or prohibition.

6. The discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use and disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if this Order has not yet been modified to incorporate the requirement.
7. This Order does not convey any property rights of any sort or any exclusive privilege. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the discharger from liabilities under federal, state, or local laws, nor create a vested right for the discharger to continue the waste discharge.
8. The discharger shall allow the Regional Board, or any authorized Regional Board representative, or any authorized representative of the USEPA (including an authorized contractor acting as a representative of the Regional Board or USEPA), upon presentation of credentials and other documents as may be required by law, to:
 - (a) Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
 - (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
 - (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
 - (d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the CWA or California Water Code, any substances or parameters at any location.
9. The discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order which has a reasonable likelihood of adversely affecting human health or the environment.
10. The discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary

facilities or similar systems which are installed by the discharger only when the operation is necessary to achieve compliance with the conditions of this Order.

11. It shall not be a defense for the discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. Upon reduction, loss, or failure of a treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of a treatment facility fails, is reduced, or is lost.

12. Bypass of Treatment Facilities

- (a) Definition

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

- (b) Notice

The discharger shall submit notice of any bypass as required in *Reporting Requirement G.6*.

13. Upset

- (a) Definition

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based effluent limitations because of factors beyond the reasonable control of the discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- (b) Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of *paragraph (c)* of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

- (c) Conditions Necessary for a Demonstration of Upset

A discharger who wishes to establish the affirmative defense of upset shall

demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (1) An upset occurred and that the discharger can identify the cause(s) of the upset;
- (2) The permitted facility was at the time being properly operated;
- (3) The discharger submitted notice of the upset as required in *Reporting Requirement G.6* of this Order; and
- (4) The discharger complied with any remedial measures required under *Provision F.9.* of this Order.

(d) Burden of Proof

In any enforcement proceeding the discharger seeking to establish the occurrence of an upset has the burden of proof.

14. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.
15. The discharger shall comply with any interim effluent limitations as established by addendum, enforcement action or revised waste discharge requirements which have been or may be adopted by this Regional Board.
16. A copy of this Order shall be maintained in the central offices at the SBPP, and shall be available to operating personnel at all times.
17. If toxicity testing results show a violation of any acute toxicity limitation identified in *Effluent Limitation B.1.(c)* of this Order, the discharger shall:
 - (a) Take all reasonable measures necessary to immediately minimize toxicity; and
 - (b) Increase the frequency of the toxicity test(s) that showed a violation or non-attainment to at least weekly until results of at least two consecutive toxicity tests do not show violations or non-attainment.

If the additional weekly tests indicate that toxicity effluent limitations, identified in *Effluent Limitation B.1.(c)*, were violated in any three of five consecutive tests, the discharger shall conduct a *Toxicity Reduction Evaluation (TRE)* which includes all reasonable steps to identify the source of toxicity. Once the source of toxicity is identified, the discharger shall take all reasonable steps to reduce the toxicity to meet the toxicity limitations identified in *Effluent Limitation B.1.(c)* of this Order.

Within fourteen days of completion of the *TRE*, the discharger shall submit the results of the *TRE*, including a summary of the findings, data generated, a list of corrective actions necessary to achieve consistent compliance with all the toxicity limitations of this Order and prevent recurrence of violations of those limitations and non-attainment of those performance goals, and a time schedule for implementation of such corrective actions. The corrective actions and time schedule shall be modified at the direction of the Regional Board.

18. If only one sample is collected during the time period associated with the effluent limitations (e.g., 30-day average), the single measurement shall be used to determine compliance with the effluent limitation for the entire time period.
19. All analytical data shall be reported uncensored with detection limits and quantitation limits identified. For any effluent limitation, compliance shall be determined using appropriate statistical methods to evaluate multiple samples. Sufficient sampling and analysis shall be conducted to determine compliance.
20. Compliance for all non-CTR pollutants shall be determined as described below:
 - (a) For purposes of determining compliance based on the average or median of the results of analysis of multiple samples, sample analysis results below the Practical Quantitation Level (PQL) shall be assumed to be zero.
 - (b) For purposes of determining compliance with limitation which is below the PQL based on the results of a single sample, a sample analysis result below the PQL shall be assumed to indicate compliance.
 - (c) When determining compliance based on a single sample, with a single effluent limitation which applies to a group of chemicals concentrations of individual members of the group may be considered to be zero if the analytical response for individual chemicals falls below the method detection limit (MDL) for that parameter.
21. Compliance for all CTR priority pollutants shall be determined using the procedures listed in Section 2.4.5 of the Implementation Policy.
22. The requirements of this Order may be modified by this Regional Board after due notice to the discharger and all other interested parties and after this Regional Board has, at a public meeting, heard and considered all comments pertaining to the proposed modifications, if this Regional Board finds that:
 - (a) It is appropriate to allow a dilution factor and/or mixing zone for the cooling water discharge from the SBPP to San Diego Bay;
 - (b) Site specific water quality objectives for one or more constituents have been established for south San Diego Bay;

- (c) It is appropriate to require implementation of best management practices to prevent or control the discharge of certain constituents to the cooling water in lieu of establishing cooling water effluent limitations for those constituents; or
- (d) The discharge of total residual chlorine from any single generating unit for more than two hours per day is required to minimize biofouling of condensers.

It is the responsibility of Duke Energy to provide the information and/or to make the demonstration(s) necessary for this Regional Board to make these findings.

G. REPORTING REQUIREMENTS

1. The discharger shall file a new Report of Waste Discharge not less than 180 days prior to any material change or proposed change in the character, location, or volume of the discharge including, but not limited to, the following:
 - (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.
 - (b) Significant change in disposal method, e.g. change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
 - (c) Significant change in disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area, potentially causing different water quality or nuisance problem.
 - (d) Increase in flow beyond that specified in this Order.
2. The discharger shall give notice to the Regional Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - (a) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR Part 122.29(b);
 - (b) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in this Order, or to notification requirements under *Reporting Requirement G.7*; or

- (c) The alteration or addition results in a significant change in the discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of conditions in this Order that are different from or absent in the existing Order, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- 3. The discharger shall give advance notice to the Regional Board of any planned changes in the permitted facility or activity which may result in noncompliance with the requirements of this Order.
- 4. This Order is not transferable to any person except after notice to the Regional Board. The Regional Board may require modification or revocation and reissuance of this Order to change the name of the discharger and incorporate such other requirements as may be necessary under the CWA or the California Water Code in accordance with the following:
 - (a) Transfers by Modification

Except as provided in *paragraph (b)* of this reporting requirement, this Order may be transferred by the discharger to a new owner or operator only if this Order has been modified or revoked and reissued, or a minor modification made to identify the new discharger and incorporate such other requirements as may be necessary under the CWA or California Water Code.
 - (b) Automatic Transfers

As an alternative to transfers under *paragraph (a)* of this reporting requirement, any NPDES permit may be automatically transferred to a new discharger if:

 - (1) The current discharger notifies the Regional Board at least 30 days in advance of the proposed transfer date in *paragraph (b)(2)* of this reporting requirement;
 - (2) The notice includes a written agreement between the existing and new dischargers containing a specific date for transfer of permit responsibility, coverage, and liability between them; and
 - (3) The Regional Board does not notify the existing discharger and the proposed new discharger of its intent to modify or revoke and reissue the Order. A modification under this subparagraph may also be a minor modification under 40 CFR Part 122.63. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in *paragraph (b)(2)* of this reporting requirement.
- 5. The discharger shall comply with Monitoring and Reporting Program No. R9-2004-

0154. Monitoring results shall be reported at the intervals specified in Monitoring and Reporting Program No. R9-2004-0154.

6. The discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally to the Regional Board within 24 hours from the time the discharger becomes aware of the circumstances. A written description of any noncompliance shall be submitted to the Regional Board within 5 days of such an occurrence and contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The following shall be included as information which must be reported within 24 hours under this reporting requirement:
 - (a) Any bypass as defined in *Provision F.12* of this Order.
 - (b) Any discharge of treated or untreated wastewater resulting from pipeline breaks, obstruction, surcharge or any other circumstance.
 - (c) Any upset which exceeds any effluent limitation in this Order.
 - (d) Violation of a daily maximum effluent limitation as specified in this Order.
 - (e) Any spills of polychlorinated biphenyl compounds (PCB). The spill residue shall be drummed and disposed of in a manner which is compliance with all federal, state and local laws and regulations. Written notification shall include pertinent information explaining reasons for the spill and shall indicate what steps were taken to prevent the problem from recurring.
 - (f) Any violation of the effluent limitations for acute toxicity as specified in this Order.
 - (g) Any violation of the prohibitions specified in this Order.
7. The discharger shall notify the Regional Board as soon as it knows or has reason to believe:
 - (a) That any activity of the discharger has occurred or will occur which would result in the direct or indirect addition to the cooling water on a routine or frequent basis, of any pollutant which is not limited in this Order, if the discharge of that pollutant will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-

dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

- (3) Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge submitted in application for this Order; or
 - (4) The level established by the Regional Board in accordance with 40 CFR 122.44(f).
- (b) That any activity of the discharger has occurred or will occur which would result in any direct or indirect addition to the cooling water, on a non-routine or infrequent basis, of a pollutant which is not limited in the permit, if the discharge of that pollutant will exceed the highest of the following "notification levels":
 - (1) Five hundred micrograms per liter (500 ug/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge submitted in application for this Order; or,
 - (4) The level established by the Regional Board in accordance with 40 CFR 122.44(f).
8. The discharger shall furnish to the Regional Board, State Board, or USEPA, within a reasonable time, any information which the Regional Board, State Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order, or to determine compliance with this Order. The discharger shall also furnish to the Regional Board, State Board, or USEPA, upon request, copies of records required to be kept by this Order.
9. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order shall be submitted no later than 14 days following each schedule date.
10. The discharger shall report all instances of noncompliance not reported under *Reporting Requirements G.5, G.6, and G.9* of this Order, at the time monitoring reports are submitted. The reports shall contain the information listed in *Reporting Requirement G.6* of this Order.
11. When the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge, or submitted incorrect information in a Report of Waste

Discharge, or in any report to the Regional Board, it shall promptly submit such facts or information.

12. If the discharger wishes to continue any activity regulated by this Order after the expiration date of this Order, the discharger must apply for and obtain new waste discharge requirements. The discharger must file a *Report of Waste Discharge* (ROWD) in accordance with Title 23, California Code of Regulations and NPDES regulations 40 CFR 122, not later than 180 days prior to the expiration date of this Order as application for issuance of new waste discharge requirements.
13. Pursuant to Section 1.3 of the *Implementation Policy*, the discharger shall re-sample the discharge and analyze for all California Toxics Rule (CTR) priority pollutants listed in 40 CFR 131.38(b)(1), in 2008. The results of this analysis shall be submitted not later than 180 days in advance of the expiration date of this Order.
14. All applications, reports, or information submitted to the Regional Board shall be signed and certified.
 - (a) All Reports of Waste Discharge shall be signed as follows:
 - (1) **For a corporation:** by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or (b) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - (2) **For a partnership or sole proprietorship:** by a general partner or the proprietor, respectively; or
 - (3) **For a municipality, State, Federal or other public agency:** by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (a) the chief executive officer of the agency, or (b) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA).

- (b) All reports required by this Order, and other information requested by the Regional Board shall be signed by a person described in *paragraph (a)* of this reporting requirement, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - (1) The authorization is made in writing by a person described in *paragraph (a)* of this reporting requirement;
 - (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and,
 - (3) The written authorization is submitted to the Regional Board.
 - (c) If an authorization under *paragraph (b)* of this reporting requirement is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of *paragraph (b)* of this reporting requirement must be submitted to the Regional Board prior to or together with any reports, information, or applications to be signed by an authorized representative.
 - (d) Any person signing a document under *paragraph (a) or (b)* of this reporting requirement shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
15. Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the California Regional Water Quality Control Board, San Diego Region. As required by the CWA, Reports of Waste Discharge, this Order, and effluent data shall not be considered confidential.

16. The discharger shall submit reports and provide notifications as required by this Order in accordance with the following:

- (a) Reports required to be submitted to the Regional Board shall be sent to:

California Regional Water Quality Control Board, San Diego Region
Industrial Compliance Unit
9174 Sky Park Court, Suite 100
San Diego, California 92123

Notifications required to be provided to the Regional Board shall be made to:

Phone - (858) 467-2952 or
Fax - (858) 571-6972

- (b) Reports required to be submitted to the USEPA shall be sent to:

U.S. Environmental Protection Agency
Region IX
Compliance Office (WTR-7)
75 Hawthorne Street
San Francisco, California 94105

H. NOTIFICATIONS

1. California Water Code Section 13263(g) states:

No discharge of waste into the waters of the state, whether or not such discharge is made pursuant to waste discharge requirements, shall create a vested right to continue such discharge. All discharges of waste into waters of the state are privileges, not rights.

2. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any condition or limitation of this Order, is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation of this Order, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or

subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any condition or limitation of this Order, and who knows at that time that he or she thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.

3. Except as provided in *Provision F.13*, nothing in this Order shall be construed to relieve the discharger from civil or criminal penalties for noncompliance.
4. Nothing in this Order shall be construed to preclude the institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties to which the discharger is or may be subject to under Section 311 of the CWA.
5. Nothing in this Order shall be construed to preclude institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the CWA.
6. This Order shall become effective 10 days after the date of its adoption, provided the USEPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, this Order shall not become effective until such objection is withdrawn.
7. This Order supersedes Order No. 96-05 upon the effective date of this Order.

I. ENDNOTE REFERENCES

1. See Bays and Estuaries Policy for definition of terms.
2. Acute Toxicity - Receiving Water Limitations and Cooling Water Discharge Effluent Limitations
Acute toxicity tests measure lethal effects on organisms exposed to test waters (e.g. effluent) compared to that of organisms exposed to control waters.
 - (a) Test Species and Methods
The tests contained in Appendix III (*Standard Monitoring Procedures*), of the 2001 California Ocean Plan (effective December 3, 2001) are incorporated by reference and shall be used to measure toxicity of the intake water and combined discharge to San Diego Bay. According to Appendix III of the Ocean Plan,

compliance with the acute toxicity limitations shall determined using USEPA approved protocols and marine test species as provided in 40 CFR 136.

(b) Quality Assurance

Unless the test method specifies the use of lab water, dilution and control water shall be obtained from a location unaffected by the SBPP discharge and approved by the Regional Board. If the dilution water is different than the culture water, then culture water shall be used in a second control.

Concurrent testing with reference toxicants shall be conducted and the results shall be reported with the test results. If either the reference toxicant tests or the test water tests do not meet all the test acceptability criteria specified for the test method, the discharger shall re-sample and re-test as soon as possible.

3. Average monthly effluent concentration is the arithmetic mean using the results of analysis of all samples collected during any 30 consecutive calendar day period.
4. Maximum daily effluent concentration shall apply to flow weighted 24-hour composite samples.

I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on November 10, 2004.

TENTATIVE
JOHN H. ROBERTUS
Executive Officer

Tentative Order No. R9-2004-0154
NPDES Permit No. CA0001368

Revision Date: October 8, 2004
Regional Board Meeting Date: November 10, 2004

Attachment 1 to Tentative Order No. R9-2004-0154

Basin Plan Waste Discharge Prohibitions

Tentative Order No. R9-2004-0154
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Attachment 2 to Tentative Order No. R9-2004-0154

Standard Provisions

ATTACHMENT 1

TENTATIVE ORDER NO. R9-2004-0154

BASIN PLAN WASTE DISCHARGE PROHIBITIONS

California Water Code Section 13243 provides that a Regional Board, in a water quality control plan, may specify certain conditions or areas where the discharge of waste, or certain types of waste is not permitted. The following discharge prohibitions are applicable to any person, as defined by Section 13050 of the California Water Code, who is a citizen, domiciliary, or political agency or entity of California whose activities in California could affect the quality of waters of the state within the boundaries of the San Diego Region.

1. The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in California Water Code Section 13050, is prohibited.
2. The discharge of waste to land, except as authorized by waste discharge requirements of the terms described in California Water Code Section 13264 is prohibited.
3. The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by an NPDES permit or a dredge or fill material permit (subject to the exemption described in California Water Code Section 13376) is prohibited.
4. The discharge of treated or untreated waste to lakes or reservoirs used for municipal water supply, or to inland surface water tributaries thereto, is prohibited.
5. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the Regional Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.
6. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited unless the discharge is authorized by the Regional Board.
7. The dumping, deposition, or discharge of waste directly into waters of the state, or adjacent to such waters in any manner that may permit its being transported into the waters, is prohibited unless authorized by the Regional Board.
8. Any discharge to a storm water conveyance system that is not composed entirely of "storm water" is prohibited unless authorized by the Regional Board. [Federal Regulations 40 CFR 122.26 (b) defines storm water as storm water runoff, snow melt runoff, and surface runoff and drainage.]

9. The unauthorized discharge of treated or untreated sewage to waters of the state or to a storm water conveyance system is prohibited.
10. The discharge of industrial wastes to conventional septic tank/subsurface disposal systems, except as authorized by the terms described in California Water Code Section 13264, is prohibited.
11. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the state is prohibited.
12. The discharge of any radiological, chemical, or biological warfare agent into waters of the state is prohibited.
13. The discharge of waste into a natural or excavated site below historic water levels is prohibited unless the discharge is authorized by the Regional Board.
14. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities that cause deleterious bottom deposits, turbidity or discoloration in waters of the state or that unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.
15. The discharge of treated or untreated sewage from vessels to Mission Bay, Oceanside Harbor, Dana Point Harbor, or other small boat harbors is prohibited.
16. The discharge of untreated sewage from vessels to San Diego Bay is prohibited.
17. The discharge of treated sewage from vessels to portions of San Diego Bay that are less than 30 feet deep at mean lower low water (MLLW) is prohibited.
18. The discharge of treated sewage from vessels that do not have a properly functioning US Coast Guard certified Type I or Type II marine sanitation device to portions of San Diego Bay that are greater than 30 feet deep at MLLW is prohibited.

ATTACHMENT 2

TENTATIVE ORDER NO. R9-2004-0154

STANDARD PROVISIONS

1. The following sections of 40 CFR are incorporated into this permit by reference:
 - a. 122.5 *Effect of a permit*
 - b. 122.21 *Application for a permit*
 - c. 122.22 *Signatories to permit applications and reports*
 - d. 122.41 *Conditions applicable to all permits*
 - e. 122.61 *Transfer of permits*
 - f. 122.62 *Modification or revocation of permits*
 - g. 122.63 *Minor modifications of permits*
 - h. 122.64 *Termination of permits*
2. *Review and revision of permit:* Upon application by any affected person, or on its own motion, the Regional Board may review and revise this permit. [CWC §13263(e)]
3. *Termination or modification of permit:* This permit may be terminated or modified for causes, including, but not limited to, all of the following:
 - (a) Violation of any condition contained in this permit.
 - (b) Obtaining this permit by misrepresentation, or failure to disclose fully all relevant facts.
 - (c) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge. [CWC §13381]
4. *Material change:* Not less than 180 days prior to any material change in the character, location, volume, or amount of waste discharge, the discharger shall submit a technical report describing such changes. Such changes include but are not limited to the following:
 - (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.
 - (b) Significant change in disposal method, e.g., change from land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
 - (c) Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.
 - (d) Increase in flow beyond that specified in the waste discharge requirements.
 - (e) Increase in area or depth to be used for solid waste disposal beyond that specified

- in the waste discharge requirements. [CWC 13372, 13376, 13264, 23 CCR 2210]
- (f) Any substantial change in the amount or characteristics of pollutants used, handled, stored, or generated.
 - (g) Any new discharge of pollutants or new potential pollutant source.
 - (h) Other circumstances which could result in a material change in the character, amount, or location of discharges. [CWC 13372, 13264, 23 CCR 2210]
5. *Transfers*: When this permit is transferred to a new owner or operator, such requirements as may be necessary under the California Water Code may be incorporated into this permit.
6. *Conditions not stayed*: The filing of a request by the Discharger for modification, revocation and reissuance, or termination of this Order, or a notification of planned change in or anticipated noncompliance with this Order does not stay any condition of this Order.
7. *Monitoring and Reporting Program*: The Discharger shall conduct monitoring and submit reports in accordance with Monitoring and Reporting Program (MRP) No. R9-2004-0154. Monitoring results shall be reported at the intervals specified in MRP No. R9-2004-0154. [CWC 13267 & 13383, 23 CCR 2230, 40 CFR 122.43(a), 122.44(l)(4), 122.48]
8. *Availability*: A copy of this Order shall be kept at a readily accessible location and shall be available to on-site personnel at all times.
9. *Duty to minimize or correct adverse impacts*: The discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.
10. *Responsibilities, liabilities, legal action, penalties*: The Porter-Cologne Water Quality Control Act provides for civil and criminal penalties comparable to, and in some cases greater than, those provided for under the Clean Water Act (CWA). [CWC §13385, 13387]

Nothing in this Order shall be construed to protect the discharger from its liabilities under federal, state, or local laws. Except as provided for in 40 CFR 122.41(m) and (n), nothing in this Order shall be construed to relieve the discharger from civil or criminal penalties for noncompliance.

Nothing in this Order shall be construed to preclude the institution of any legal action or relieve the discharger from any responsibilities, liabilities, or penalties to which the discharger is or may be subject to under Section 311 of the CWA.

Nothing in this Order shall be construed to preclude institution of any legal action or

relieve the discharger from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authoring preserved by Section 510 of the CWA

11. *Noncompliance*: Any noncompliance with this permit constitutes violation of the California Water Code and is grounds for denial of an application for permit modification. [40 CFR 122.41 (a)]
12. *Discharge is a privilege*: No discharge of waste into waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the state are privileges, not rights. [CWC §13263(g)]
13. *Permittee*: For the purposes of this permit, the term "permittee" used in parts of 40 CFR incorporated into this permit by reference and/or applicable to this permit shall have the same meaning as the term "discharger" used elsewhere in this permit.
14. *Director*: For the purposes of this permit, the term "Director" used in parts of 40 CFR incorporated into this permit by reference and/or applicable to this permit shall have the same meaning as the term "Regional Board" used elsewhere in this permit, except that in 40 CFR 122.41(h) & (i), "Director" shall mean "Regional Board, SWRCB, and USEPA."
15. *Effective date*: This Order shall become effective ten days after the date of its adoption provided the USEPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, this Order shall not become effective until such objection is withdrawn.
16. *Continuation of expired permit*: After this permit expires, the terms and conditions of this permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on the continuation of expired permits are complied with. [40 CFR 122.6, 23 CCR 2235.4]
17. *Applications*: Any application submitted by the discharger for reissuance or modification of this permit shall satisfy all applicable requirements specified in federal regulations as well as any additional requirements for submittal of a Report of Waste Discharge specified in the California Water Code and the California Code of Regulations.
18. *Confidentiality*: Except as provided for in 40 CFR 122.7, no information or documents submitted in accordance with or in application for this permit will be considered confidential, and all such information and documents shall be available for review by the public at the office of the Regional Board.
19. *Severability*: The provisions of this Order are severable, and if any provision of this Order, or the application of any provisions of this Order to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected thereby.

20. *Discharge Monitoring Quality Assurance (DMQA) Program:* Then Discharger shall conduct appropriate analyses on any sample provided by EPA as part of the DMQA program. The results of such analyses shall be submitted to EPA's DMQA manager. [SWRCB/USEPA 106 MOA]
21. *Pollution, Contamination, Nuisance:* The handling, transport, treatment, or disposal of waste or the discharge of waste to waters of the state in a manner which causes or threatens to cause a condition of pollution, contamination, or nuisance, as those terms are defined in CWC 13050, is prohibited.
22. *Additional Reporting Requirements:* [40 CFR 122.42(a)] In addition to the reporting requirements under 40 CFR 122.41 (l), all existing manufacturing, commercial, mining, and silvicultural discharges must notify the Regional Board as soon as they know or have reason to believe:
 - (1) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, If that discharge will exceed the highest of the following "notification levels":
 - (a) One hundred micrograms per liter (100 µg/l);
 - (b) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (c) The level established by the Regional Board in accordance with 40 CFR 122.44(f).
 - (2) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (a) Five hundred micrograms per liter (500 µg/l)
 - (b) One milligram per liter (1 mg/l) for antimony;
 - (c) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7).
 - (d) The level established by the Regional Board in accordance with 40 CFR 122.44(f).

24. *Report Submittal:* The discharger shall submit reports and provide notifications as required by this Order in accordance with the following:

a. Reports required to be submitted to this Regional Board shall be sent to:

Industrial Compliance Unit
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, California 92123

Notifications required to be provided to this Regional Board shall be made to:

Telephone - (858) 467-2952 or
Facsimile - (858) 571-6972

b. Reports required to be submitted to the USEPA shall be sent to:

U.S. Environmental Protection Agency
Region IX
Compliance Office (WTR-7)
75 Hawthorne Street
San Francisco, California 94105

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

**TENTATIVE
MONITORING AND REPORTING PROGRAM NO. R9-2004-0154
NPDES PERMIT NO. CA0001368**

**WASTE DISCHARGE REQUIREMENTS
FOR
DUKE ENERGY SOUTH BAY, LLC
SOUTH BAY POWER PLANT
SAN DIEGO COUNTY**

This Monitoring and Reporting Program (MRP) shall become effective with the adoption of Order No. R9-2004-0154 and supersedes MRP No. 96-05 in its entirety.

PURPOSE

This monitoring program is intended to:

- Document short-term and long-term effects of the discharge on receiving waters, sediments, biota, and beneficial uses of the receiving water.
- Determine compliance with NPDES permit terms and conditions.
- Be used to determine compliance with effluent limitations and water quality objectives.

A. MONITORING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in Order No. R9-2004-0154 or in this monitoring and reporting program and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Regional Board.
2. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes. Guidance in selection, installation, calibration and operation of acceptable flow measurement devices can be obtained from the following references:

- (a) "A Guide to Methods and Standards for the Measurement of Water Flow," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 421, May 1975, 96 pp. (Available from the U.S. Government Printing Office, Washington, D.C. 20402. Order by SD Catalog No. C13.10:421.)
 - (b) "Water Measurement Manual," U.S. Department of Interior, Bureau of Reclamation, Second Edition, Revised Reprint, 1974, 327 pp. (Available from the U.S. Government Printing Office, Washington D.C. 20402. Order by Catalog No. 172.19/2:W29/2, Stock No. S/N 24003-0027.)
 - (c) "Flow Measurement in Open Channels and Closed Conduits," U.S. Department of Commerce, National Bureau of Standards, NBS Special Publication 484, October 1977, 982 pp. (Available in paper copy or microfiche from National Technical Information Services (NTIS) Springfield, VA 22151. Order by NTIS No. PB-273 535/5ST.)
 - (d) "NPDES Compliance Sampling Manual," U.S. Environmental Protection Agency, Office of Water Enforcement, Publication MCD-51, 1977, 140 pp. (Available from the General Services Administration (8FFS), Centralized Mailing Lists Services, Building 41, Denver Federal Center, CO 80225.)
- 3. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved under Title 40, United States Code of Federal Regulations (CFR), Part 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act" as amended, unless other test procedures are specified in Order No. R9-2004-0154 and/or in this monitoring and reporting program and/or by the Regional Board.
 - 4. Duplicate copies of the monitoring reports signed and certified as required by *Reporting Requirement G.14* of Order No. R9-2004-0154 must be submitted to the USEPA and Regional Board at the addresses listed in *Reporting Requirement G.16* of Order No. R9-2004-0154.
 - 5. If the discharger monitors any pollutant more frequently than required by Order No. R9-2004-0154 or by this monitoring and reporting program, using test procedures approved under 40 CFR Part 136, or as specified in Order No. R9-2004-0154 or this monitoring and reporting program or by the Regional Board, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report. The increased frequency of monitoring shall also be reported.
 - 6. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for

continuous monitoring instrumentation, copies of all reports required by Order No. R9-2004-0154 and this monitoring and reporting program, for a period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Board at any time.

7. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in Order No. R9-2004-0154 or this Monitoring and Reporting Program.
8. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Regional Board.
9. The discharger shall report all instances of noncompliance not reported under *Reporting Requirement G.5, G.6, and G.9* of Order No. R9-2004-0154 at the time monitoring reports are submitted. The reports shall contain the information listed in *Reporting Requirement G.6*.
10. Records of monitoring information shall include:
 - (a) The date, exact place, and time of sampling or measurements;
 - (b) The individual(s) who performed the sampling or measurements;
 - (c) The date(s) analyses were performed;
 - (d) The individual(s) who performed the analyses;
 - (e) The analytical techniques or methods used; and
 - (f) The results of such analyses.

In addition, records of all cooling water intake monitoring, effluent monitoring, and receiving water monitoring shall include:

- (g) The applicable tide table for the days on which sampling/monitoring was conducted; and
 - (h) The moon phase (in days after the new moon) for the days on which sampling/monitoring was conducted.
11. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices.

12. The discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. An annual report shall be submitted by April 1 of each year which summarizes the QA activities for the previous year. Duplicate chemical analyses must be conducted on a minimum of ten percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA or the Regional Board, the discharger will participate in the NPDES discharge monitoring report QA performance study. The discharger should have a success rate equal or greater than 80 percent.
13. Pursuant to Section 2.4 of the *Implementation Policy*, California Toxics Rule (CTR) priority pollutants shall comply with specific reporting and monitoring requirements, as listed in Attachment 3.
14. Laboratory method detection limits (MDLs) and practical quantitation levels (PQLs) shall be identified for each non-CTR constituent in the matrix being analyzed with all reported analytical data. Acceptance of data shall be based on demonstrated laboratory performance.
15. Monitoring results shall be reported at intervals and in a manner specified in Order No. R9-2004-0154 or in this Monitoring and Reporting Program.
16. This monitoring program may be modified by the Regional Board, as appropriate.

B. COOLING WATER INTAKE MONITORING^{8/}

1. Sampling/Monitoring Location

Cooling water intake sampling/monitoring shall be conducted at the west end of the intake basin, halfway across the intake channel, at Station I (see Attachment 1).

2. Cooling water intake monitoring shall be conducted as specified below:

Parameter	Units	Sample Type ^{1/2/}	Minimum Frequency of Analysis	Reporting Frequency
Temperature	°F	Measurement	Continuous ^{3/}	Monthly
Dissolved Oxygen	mg/l & percent saturation	Grab or Measurement [*]	Monthly ^{4/10/12}	Monthly
Total Suspended Solids	mg/l lb/day	Grab	Monthly ^{4/}	Monthly

pH	pH units	Grab	Monthly ^{5/}	Monthly
Acute Toxicity ^{6/}	6/	24-hr. composite	Monthly	Monthly
Chronic Toxicity ^{7/}	TUc	24-hr. composite	Monthly	Monthly
Salinity	ppt	Grab or Measurement [*]	Monthly	Monthly
Transparency	Meters (Secchi Disk)	Measurement	Monthly ^{4/10/12}	Monthly
Total Chlorine Residual ^{9/}	µg/l lb/day	Grab	Weekly ¹⁰	Monthly
Copper (total recoverable) ^{11/13}	µg /l lb/day	24-hr. composite	Monthly ¹⁰	Monthly

* within 2 feet of surface and just above the bottom

C. COOLING WATER EFFLUENT MONITORING^{8/}

1. Sampling/Monitoring Location

Sampling/monitoring location for the cooling water discharge from the South Bay Power Plant shall be as follows (see Attachment 1):

Sampling/Monitoring Location Identification	Sampling/Monitoring Location	Comment
S2*	At the west end of the discharge basin (at the property line), halfway across the discharge channel (at approximately Latitude 32° 36' 48", North; Longitude 117° 05' 52", West)	All parameters (specified in <i>Section C.2</i> of the MRP) shall be monitored at this location.
S1*	At the weather station location (Latitude 32° 36' 46.6", North; Longitude 117° 06' 04.5", West), approximately 1000 feet downstream of S2.	Discharge temperature shall be monitored at this location on an interim basis.

* The discharger shall commence temperature monitoring at Station S2 (property line) to demonstrate compliance with thermal discharge limitations at the property line, no later than **36 months** after adoption of this Order. In the interim, compliance with thermal discharge limitations shall be enforced at monitoring station S1.

2. Cooling water effluent monitoring shall be conducted as specified below:

Parameter	Units	Sample Type ^{1/2/}	Minimum Frequency of Analysis	Reporting Frequency
Flow	MGD	--	Continuous	Monthly
Temperature	°F	Measurement	Continuous ^{3/}	Monthly
Dissolved Oxygen	mg/l & percent saturation	Grab or Measurement	Monthly ^{4/10}	Monthly

Parameter	Units	Sample Type ^{1/2/}	Minimum Frequency of Analysis	Reporting Frequency
Total Suspended Solids	mg/l lb/day	Grab	Monthly ^{4/10}	Monthly
Total Chlorine Residual ^{9/}	µg/l lb/day	Grab	Weekly ¹⁰	Monthly
pH	pH units	Grab	Monthly ^{5/10}	Monthly
Acute Toxicity ^{6/}	6/	24-hr. composite	Monthly ^{10/}	Monthly
Chronic Toxicity ^{7/}	TUc	24-hr. composite	Monthly ^{10/}	Monthly
Grease and Oil	mg/l lb/day	Grab	Monthly ^{10/}	Monthly
Copper (total recoverable) ^{11/13}	µg/l lb/day	24-hr. composite	Monthly ^{10/}	Monthly
Cadmium ^{13/}	µg/l lb/day	24-hr. composite	Monthly ^{10/}	Monthly
Lead ^{13/}	µg/l lb/day	24-hr. composite	Monthly ^{10/}	Monthly
Mercury ^{13/}	µg/l lb/day	24-hr. composite	Monthly ^{10/}	Monthly
Arsenic ^{13/}	µg/l lb/day	24-hr. composite	Monthly ^{10/}	Monthly
Chromium (total) ^{13/}	µg/l lb/day	Grab	Monthly ^{10/}	Monthly
Chromium (hexavalent) ^{13/}	µg/l lb/day	Grab	Monthly ^{10/}	Monthly
Silver ^{13/}	µg/l lb/day	24-hr. composite	Monthly ^{10/}	Monthly
Zinc ^{13/}	µg/l lb/day	24-hr. composite	Monthly ^{10/}	Monthly

3. Resampling of California Toxic Rule (CTR) Pollutants

Pursuant to *Reporting Requirement G.13* of Order No. R9-2004-0154, the discharger shall re-sample and analyze all 126 CTR priority pollutants listed in 40 CFR 131.38(b)(1), in the cooling water effluent, in 2008. The results of this analysis shall be submitted in conjunction with the *Report of Waste Discharge* for the renewal of the Order No. R9-2004-0154, not later than 180 days prior to the expiration date of the Order.

D. RECEIVING WATER MONITORING

Receiving water monitoring shall be conducted as specified below. Sampling, preservation, and analysis shall be by methods described in the discharger's report titled *"SBPP Cooling Water System Effects on San Diego Bay, Volume 1: Compliance with Section 316(a) of the Clean Water Act for the South Bay Power Plant, August 2004"*, unless other methods are specified in Order No. R9-2004-0154, this monitoring and reporting program, or by the Regional Board. The receiving water monitoring requirements may be modified by the Regional Board at any time.

1. Station Locations

Receiving waters shall be monitored at the following designated stations (the approximate locations of the stations are shown on Attachment 2 to this monitoring program):

S1, E7, E5, F4, F3, F2, E4, E3, D4, C3, A3, N2

2. Receiving water monitoring shall be conducted in accordance with the following schedule:

Parameter	Units	Sample Type	Minimum Frequency of Analysis	Reporting Frequency
Temperature	°F	Measurement (at 2 foot depth intervals)	Monthly ^{10/12}	Monthly
Dissolved Oxygen	mg/l & percent saturation ^{11/}	Grab or Measurement*	Monthly ^{4/10/12}	Monthly
Transparency	Meters (Secchi Disk)	Measurement	Monthly ^{4/10/12}	Monthly
Salinity	ppt	Grab or Measurement*	Monthly	Monthly
Copper (total recoverable) ^{11/}	µg/l	Grab	Monthly ^{10/}	Monthly
Cadmium ^{13/}	µg/l	Grab	Monthly ^{10/}	Monthly
Lead ^{13/}	µg/l	Grab	Monthly ^{10/}	Monthly
Mercury ^{13/}	µg/l	Grab	Monthly ^{10/}	Monthly
Arsenic ^{13/}	µg/l	Grab	Monthly ^{10/}	Monthly
Chromium (total) ^{13/}	µg/l	Grab	Monthly ^{10/}	Monthly

Parameter	Units	Sample Type	Minimum Frequency of Analysis	Reporting Frequency
Chromium ^{13/} (hexavalent)	µg/l	Grab	Monthly ^{10/}	Monthly
Silver ^{13/}	µg/l	Grab	Monthly ^{10/}	Monthly
Zinc ^{13/}	µg/l	Grab	Monthly ^{10/}	Monthly
Total Chlorine** Residual	µg/l	Grab	Weekly ^{9/10/}	Monthly

* within 2 feet of surface and just above the bottom.

** Total chlorine residual receiving water monitoring shall be conducted at stations E7 and S1 only.

E. CHLORINATION LOG

The discharger shall maintain a chlorination log which records all chlorination dates, times, durations, rates (pounds per day), and dosages (ug/l) for each unit of the South Bay Power Plant and the times of chlorine and toxicity monitoring. A copy of the log shall be submitted monthly.

F. ANNUAL SUMMARY OF MONITORING DATA

By March 1 of each year, the discharger shall submit an annual report to the Regional Board.

The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the discharger shall discuss the compliance record and the corrective actions taken or planned, which may be needed to bring the discharger into full compliance with the requirements of Order No. R9-2004-0154.

G. MONITORING REPORT SCHEDULE

- Monitoring reports shall be submitted to the Regional Board according to the dates in the following schedule:

Report Type	Report Period	Report Due
Monthly Discharge and Receiving Water Monitoring Reports	Each month	First day of the second month after the month of sampling
Annual Summary Reports	January - December	March 1 st of each year

2. Special Supplemental Study Reports as required by Section E, *Special Supplemental Studies and Compliance Workplans*, of Order No. R9-2004-0154 shall be submitted to the Regional Board according to the dates in the following schedule:

(a) CWA Section 316(b) Updated Comprehensive Demonstration Study

- (1) A *Proposal for Information Collection* is due no later than 12 months after adoption of Order No. R9-2004-0154.
- (2) A Final Technical Report for the *Comprehensive Demonstration Study* is due no later than 30 months after adoption of Order No. R9-2004-0154.

(b) Workplan for Relocation of Thermal Discharge Limitations Compliance Point to the Property Line (Station S2)

- (1) A Workplan for relocation of the thermal discharge limitations compliance point to the property Line (Station S2) shall be submitted no later than 12 months after adoption of the Order.
- (2) Progress Reports on the implementation of the Workplan shall be submitted 6 and 12 months after submission of the Workplan.
- (2) A Final Technical Report on the implementation of the Workplan shall be submitted no later than 30 months after adoption of the Order.

(c) Workplan for Compliance with Final Copper Effluent Limitations

- (1) A Workplan for compliance with final copper effluent limitations shall be submitted no later than 12 months after adoption of the Order.
- (3) Progress Reports on the implementation of the Workplan shall be submitted 6 and 12 months after submission of the Workplan.
- (3) A Final Technical Report on the implementation of the Workplan shall be submitted no later than 30 months after adoption of the Order.

H. ENDNOTE REFERENCES

1. A grab sample is defined as an individual sample of at least 100 milliliters collected

over a period not exceeding 15 minutes. Grab samples shall be collected over a shorter period if necessary to ensure that the constituent/parameter concentration in the sample is the same as that at the sampling location at the time the sample is collected.

2. A composite sample is defined as a combination of at least eight sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.
3. Temperature shall be recorded at a minimum frequency of once every two hours. The average intake and discharge temperatures for each calendar day shall be reported. The average and maximum temperature difference between intake and discharge temperatures for each calendar day shall also be reported.
4. All applicable intake water, effluent, and receiving water monitoring for dissolved oxygen, total suspended solids, and transparency shall be conducted between noon and 6:00 PM.
5. pH shall be determined only when total chlorine residual is determined.
6. Acute toxicity tests measure lethal effects on organisms exposed to test waters (e.g. effluent) compared to that of organisms exposed to control waters.

(a) Test Species and Methods

The tests contained in Appendix III (*Standard Monitoring Procedures*), of the 2001 California Ocean Plan (effective December 3, 2001) are incorporated by reference and shall be used to measure toxicity of the intake water and combined discharge to San Diego Bay. According to Appendix III of the Ocean Plan, compliance with the acute toxicity limitations shall be determined using USEPA approved protocols and marine test species as provided in 40 CFR 136.

(b) Quality Assurance

Unless the test method specifies the use of lab water, dilution and control water shall be obtained from a location unaffected by the SBPP discharge and approved by the Regional Board. If the dilution water is different than the culture water, then culture water shall be used in a second control.

Concurrent testing with reference toxicants shall be conducted and the results shall be reported with the test results. If either the reference toxicant tests or the test water tests do not meet all the test acceptability criteria specified for the test method, the discharger shall re-sample and re-test as soon as possible.

7. Chronic toxicity tests measure sublethal effects (e.g., reduced growth or reproduction) on organisms exposed to test waters (e.g. effluent) compared to that of organisms exposed to control waters.

(a) Test Species and Methods

Chronic toxicity shall be determined using the approved tests listed in Table III-1 (*Approved Tests – Chronic Toxicity, TUc*), Appendix III (*Standard Monitoring Procedures*), of the 2001 California Ocean Plan (effective December 3, 2001). Chronic Toxicity (TUc) shall be expressed in Toxic Units Chronic (TUc), where:

$$TUc = \frac{100}{NOEL}$$

and the NOEL (No Observed Effect Level) is expressed as the maximum percentage of test water that causes no observable effect on a test organism, as determined by the results of the approved critical life stage toxicity tests, listed in Table III-1.

Starting 4th quarter of 2004, the discharger shall conduct critical life stage toxicity tests with at least three species (one vertebrate, one invertebrate, and one plant) approved by the Regional Board. After this initial screening period, chronic toxicity monitoring shall be conducted using the species determined to be most sensitive during the screening period. Each year, in a different month than the previous screening period(s), the discharger shall re-screen, using species approved by the Regional Board. After each re-screening period, chronic toxicity monitoring shall be conducted using the species determined to be the most sensitive during the most recent re-screening period.

(b) Quality Assurance

Unless the test method specifies the use of lab water, dilution and control water shall be obtained from a location unaffected by the South Bay Power Plant discharge and approved by the Regional Board. If the dilution water is different than the culture water, then culture water shall be used in a second control.

Concurrent testing with reference toxicants shall be conducted and the results shall be reported with the test results. If either the reference toxicant tests or the test water tests do not meet all the test acceptability criteria specified for the test method, the discharger shall re-sample and re-test as soon as possible.

8. Effluent samples shall be collected and measurements shall be made after the corresponding intake water samples are collected and measurements are made. The

time interval between intake water sample collection and measurement and the corresponding effluent sample collection and measurement shall closely approximate the cooling water transit time from the intake water monitoring/sampling location to the effluent monitoring/sampling location.

9. Total chlorine residual concentrations for effluent and receiving water shall be determined for a complete chlorination cycle that occurs between noon and 6:00 p.m. A good faith effort shall be made to determine total residual chlorine concentrations associated with chlorination of each unit that is chlorinated during the chlorination cycle. As a minimum, such a good faith effort shall consist of determining total chlorine residual concentrations associated with chlorination of at least two units when three or four units are chlorinated during the chlorination cycle, and associated with at least one unit when one or two units are chlorinated during the chlorination cycle.

Samples shall be collected and analyzed for total chlorine residual concentrations at times when concentrations are anticipated to be at or near their highest (i.e. when cooling water from the second half of the period in which a unit is chlorinated passes the sampling/monitoring location).

10. Sampling shall be conducted on weekdays (Monday through Friday) only.
11. Discharge and receiving water samples for copper shall be analyzed according to EPA Method 1638 or 1640. Method 1638 (ICP/MS) or 1640 (On-Line Chelation) will eliminate the sodium-argon complex before the sample is tested for copper.
12. Temperature and transparency of receiving water shall be determined whenever dissolved oxygen is determined. The dissolved oxygen and transparency values at the receiving water stations shall be compared to the corresponding values at the intake, for monthly monitoring results. The ratio of the two values shall be reported.
13. Pursuant to Section 2.4 of the Implementation Policy, CTR pollutants shall comply with specific reporting and monitoring requirements, as listed in Attachment 3 of this MRP.

Ordered by

— TENTATIVE____
JOHN H. ROBERTUS
Executive Officer
November 10, 2004

Attachment 1 to Monitoring and Reporting Program No. R9-2004-0154

South Bay Power Plant Intake and Effluent Sampling Locations

Attachment 2 to Monitoring and Reporting Program No. R9-2004-0154

South Bay Power Plant Receiving Water Monitoring Stations

Attachment 3 to Monitoring and Reporting Program No. R9-2004-0154

Monitoring and Reporting Requirements for CTR Pollutants

The following information must be included in the monitoring reports for CTR pollutants:

1. Laboratory Requirements

The laboratory analyzing the monitoring samples shall be certified by the Department of Health Services in accordance with the provisions of Water Code Section 13176 and must include quality assurance/quality control data with their reports.

2. Minimum Levels (ML)

The minimum levels are in accordance with the values listed in Tables 2a through 2d of the Implementation Policy.

3. Method Detection Limit (MDL)

The method detection limit for the laboratory shall be determined by the procedure found in 40 Code of Federal Regulations (CFR) Part 136 (revised as of May 14, 1999).

4. Reporting Protocols

The results of analytical determinations for the presence of chemical constituents in a sample shall use the following reporting protocols (Implementation Policy §2.4.4):

- (a) Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e. the measured chemical concentration in the sample).
- (b) Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.
- (c) For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory, if such information is available, may include numerical estimates of the data quantity for the reported result. Numerical estimates of data quantity may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- (d) Sample results that are less than the laboratory's MDL shall be reported as "Not Detected" or ND.

5. Data Format

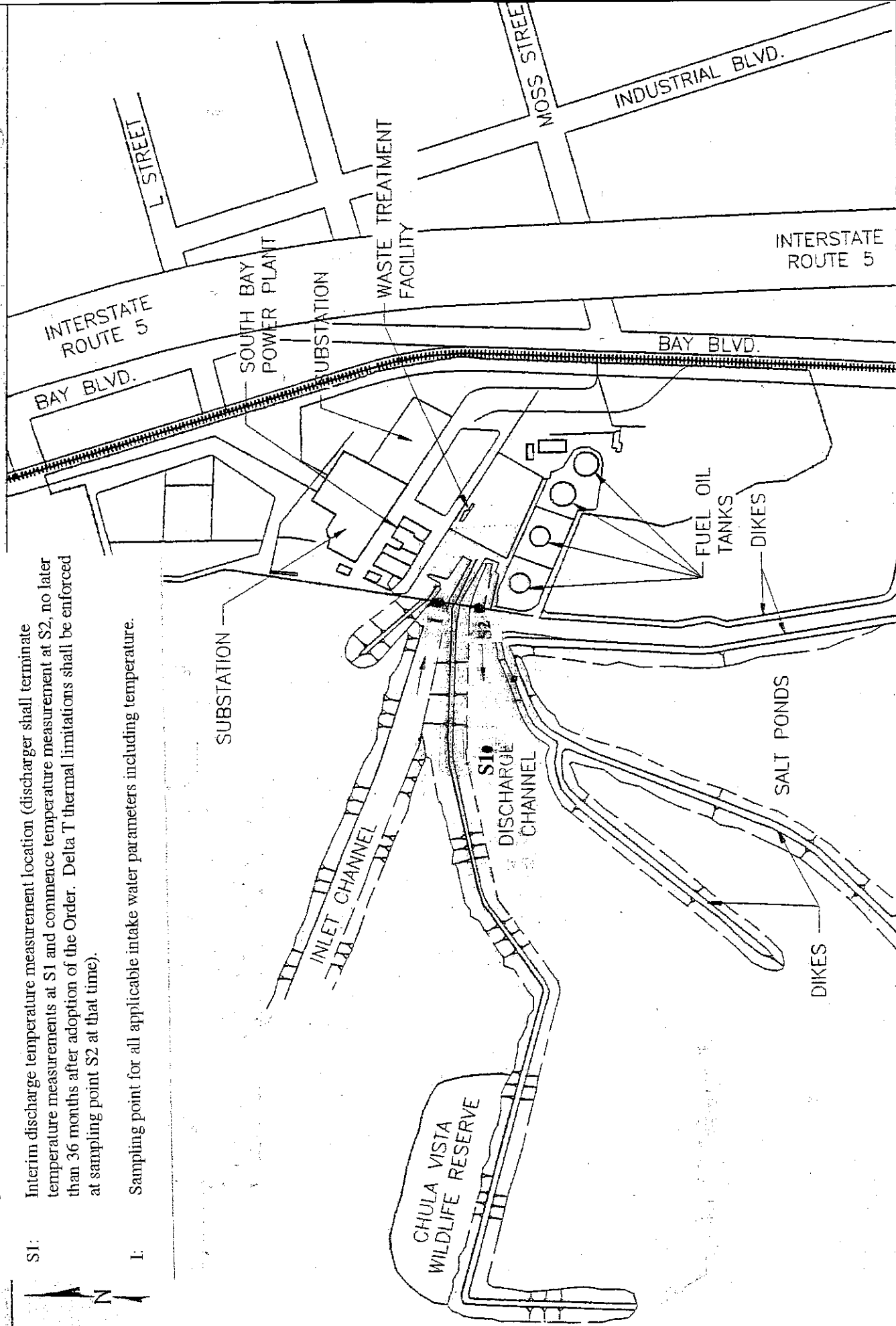
The monitoring report shall contain the following information for each pollutant:

- (a) The name of the pollutant.
- (b) The analytical results of the effluent monitoring.
- (b) The applicable Minimum Level (ML) as specified in Tables 2a through 2d of the Implementation Policy.
- (d) The laboratory's current Method Detection Limit (MDL), as determined by the procedure found in 40 CFR Part 136 (revised as of May 14, 1999).

S2: Sampling point (property line) for verification of compliance with all discharge parameters except Delta T thermal limitations.

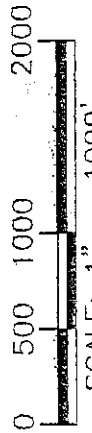
S1: Interim discharge temperature measurement location (discharger shall terminate temperature measurements at S1 and commence temperature measurement at S2, no later than 36 months after adoption of the Order. Delta T thermal limitations shall be enforced at sampling point S2 at that time).

I: Sampling point for all applicable intake water parameters including temperature.



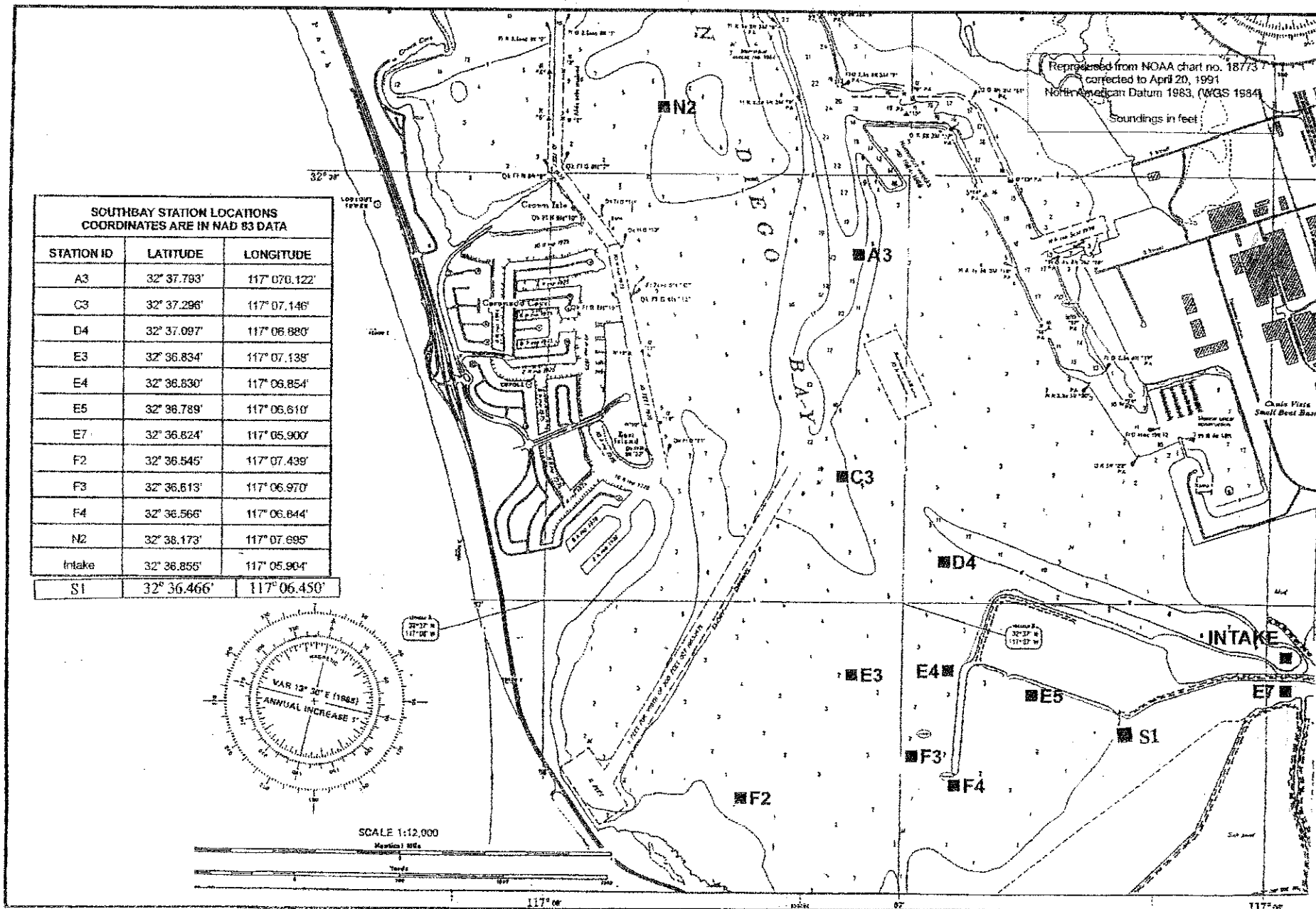
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SOUTH BAY POWER PLANT

Intake and Discharge Sampling Locations



Sampling Station Locations for South Bay Monitoring Program.

Receiving Water